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Statistics Probability Quiz #2

Show all work. Use proper notation where noted. Where applicable, label your answers. Draw a tree in the bottom right-hand corner.

For 1-3, write the vocabulary word.

1. The long-run relative frequency of an event.
2. two events that have no outcome in common.
3. A single attempt or realization of a random phenomenon

4. A survey of families revealed that 60% of all families eat turkey at holiday meals, 41% eat ham, and 15% have both turkey and ham to eat at holiday meals. You only have to use proper notation on the conditional probability questions.

a. Are having turkey and ham disjoint events? Explain.

b. What is the probability that a family selected at random had ham or turkey at their holiday meal?

c. What is the probability that a family selected at random had only ham without having turkey at their holiday meal?

c. Given that a family had ham, what is the probability they had turkey as well?

d. Given the family did not eat turkey, what is the probability they had ham?

e. Are eating ham and turkey independent? Check using the proper conditions!

f. What is the probability that a family selected at random had turkey and ham at their holiday meal?

5. Answer the following questions for rolling a standard dice three times in a row. Use proper notation.

1. We can say they are independent events. Why? (You do not need to do a formal check. Just state why.)
2. probability of rolling three 6s in a row.
3. probability of rolling an even number all three times
4. probability of rolling at least one 2

6. A recent Maryland safety study found that in 77% of all accidents, the driver was wearing a seatbelt. Accident reports indicated that 92% of those drivers escaped serious injury (defined as hospitalization or death), but only 63% of the non-belted drivers were fortunate.

1. What is the probability that a randomly selected person will have a serious injury?
2. Given that a person was in a serious accident, what is the probability they were not wearing their seatbelt?